Epitomes

Important Advances in Clinical Medicine

Urology

The Scientific Board of the California Medical Association presents the following inventory of items of progress in urology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, research workers or scholars to stay abreast of these items of progress in urology that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Urology of the California Medical Association and the summaries were prepared under its direction.

Reprint requests to Division of Scientific and Educational Activities, California Medical Association, 44 Gough Street, San Francisco, CA 94103

New Forms of Treatment in Cases of Urinary Stone Disease

WITHIN TEN YEARS, medical and surgical treatment of urinary stones has changed radically. Three of the five types of urinary stones, which account for 30% of all stones, may be prevented and, in some cases, dissolved by oral medications. Uric acid and cystine stones will often dissolve with oral administration of alkali and large volumes (more than three liters) of fluids per day. Allopurinol or penicillamine, respectively, will further inhibit formation of these stones. Struvite (magnesium ammonium phosphate) precipitation can be inhibited by giving acetohydroxamic acid or its analogs, and these stones may sometimes be dissolved by irrigating with acid solutions.

Unfortunately, some of the foregoing and the remaining 70% of patients with two types of calcium stones have little hope of dissolving their stones. But we do have many ways of preventing the formation of new calcium stones in such patients: dietary limitation of calcium and oxalate, high water intake and the use of medications such as neutral phosphates, hydrochlorothiazide, citrate and others. A short metabolic evaluation will indicate the best approach for most patients.

For some patients, preventive measures come too late: when they arrive at an emergency room they have nausea, vomiting and renal colic due to stone obstruction. Some will require surgical assistance to be relieved of the stone. In the past, such relief required cutting procedures in more than 70% of patients. Now, only 20% of patients will require "big" operations. In the remainder, stones lodged in the kidney may be pulverized and removed either by percutaneous ultrasonic technique, which requires a puncture in the flank area, or by extracorporeal shock wave lithotripsy, which requires no incision. Ureteral stones, even those near the kidney, may now be pulverized via a miniature telescope with ultrasonic wand, then removed as fragments.

This combination of medical and surgical therapy for urinary stone disease has reduced the stone recurrence rate from 80% to 20%, has reduced the average hospital stay from eight days to four days and the time lost from work to ten days rather than six weeks.

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Renal Transplantation

SIGNIFICANT ADVANCES have been made in renal transplantation in the past five years. Graft functional survival has risen to between 80% and 90% at one year while patient mortality has fallen to 5% at one year. The best results continue to be achieved with living and related donors. Tissue typing allows the selection of a human-leukocyte-antigen-identical sibling donor with a 90% to 95% graft functional result at one year and a 70% graft function at ten years. The use of donor-specific transfusions for recipients of one-haplotype-matched living donor kidneys produces similar highly successful grafts.

Recipients of cadaveric kidneys enjoy an improved graft function with the use of deliberate pretransplant blood transfusions and donor-recipient matching of donor-recipient pairs. These factors will result in 70% graft function at one year. The use of the new immunosuppressant, cyclosporine, can improve this percentage of successful grafts to 80% at one year. The oncogenetic potential of cyclosporine observed in early clinical experience appears to be largely eliminated with smaller dosage schedules.

Pulmonary and other infections were the primary cause